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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,718	08/09/2001	Douglas Raymond Dykaar	5732	3945

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EXAMINER

BARBER, THERESE

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/924,718

Applicant(s)

DYKAAR ET AL.

Examiner

Therese Barber

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 21-28 and 33-36 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-20 is/are allowed.
- 6) ☒ Claim(s) 29-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the instant invention described in claims 29-32, an apparatus comprised of the radiation generator, the scintillator, the sensor and the display, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. This application lacks formal drawings. The informal drawings filed in this application are acceptable for examination purposes. When the application is allowed, applicant will be required to submit new formal drawings.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamamoto (USPN 6,479,827 B1) and Harootian (USPN 5,303,373).

5. Regarding claims 29, Hamamoto discloses an apparatus comprised of a radiation generator (6050) for generating incident radiation (6060); a scintillator disposed in a confronting relation with the radiation generator and formed of a material capable of transforming the incident radiation into a visible light image (col. 4, lines 46-54; col. 8, line 65 to col. 9, line 1; figs. 6 and 17); a fiber optic bundle (2a or 2b) having a first end disposed in a confronting relation with the scintillator (4) and finished along a plane oriented with respect to a first end fiber direction (fig. 6), the fiber optic bundle (2a or 2b) having a second end finished along another plane oriented with respect to a second fiber direction (fig. 6); the fiber optic bundle having a transmitting region disposed between the first end and the second end (fig. 6); a sensor disposed in confronting relation with the second end of the optic fiber bundle (col. 3, lines 28-55 and 61-65); a display coupled to the sensor (col. 3, lines 57-60; col. 9, lines 2-5; figs. 6 and 17); wherein the first end defines a first end plane (fig. 6); the second end defines a second end plane (fig. 6); and the second end plane is oblique to the first end plane (fig. 6). Hamamoto also discloses that imaging sensing apparatus can be utilized in x-ray imaging devices for providing highly accurate medical care, while implementing high image resolution while reducing the size and cost of the x-ray imaging devices (col. 8, lines 51-57). The word "transverse" can be defined as being across; set crosswise; or made at right angles and the word "orthogonal" can be defined as intersecting or lying at right angles. In fig. 6, Hamamoto discloses that the fiber optic bundle (2a) can have axis angles of 90° and that the optical fiber bundle are configured to guide light obliquely relative to the direction of the incidence plane of light and towards the periphery of the solid state imaging sensing devices (abstract). In addition, Hamamoto discloses that the size and

Art Unit: 2882

the axis angles of inclination of the optical fiber are determined by the positional relation between the solid-state sensors and the size of the photoreceptive area (col. 6, lines 54-66).

However, Hamamoto fails to disclose the first end of the optic fiber bundle compress the visible light image in a first image direction or that the second end of the optic fiber bundle will expand the visible light image.

Harootain discloses an optical fiber bundle (col. 2, lines 23-27) that can be utilized in imaging devices (col. 4, lines 17-33). Harootain further discloses that the optical fiber bundle can compress the pixels along a given axis to fit precisely from one side of the imaging device to other side of the imaging device, resulting in equivalent change in the magnification of the image along a particular axis (col. 3, lines 3-14). Harootain also discloses that there will be magnification and size changes for every fiber of the optical fiber bundle along a cross-sectional axis of the fiber (col. 3, lines 18-27).

It would have been obvious to one having ordinary skill in the art at the time the invention was made that the image sensing apparatus having the optical fiber bundle with the scintillator and sensor as disclosed by Hamamoto could be modified wherein the optical fiber bundle can compress and expand the pixels of every fiber in the optical fiber bundle as disclosed by Harootian. Accordingly, the motivation is the resultant structure can be utilized to transmit and manipulate x-ray images by implementing high image resolution based on the compression/expansion properties of the optical fiber bundle, in addition, to being more cost effective due to the reduction in the size of the x-ray imaging devices.

Allowable Subject Matter

6. Claims 1-20 are allowed.
7. Regarding claims 1-20, the claims are allowable over the prior art of record for at least the reasons that although the prior art discloses an apparatus comprised of a sensor and a optical fiber bundle having at least one end that is obliquely angled, the prior art fails to teach or to reasonably suggest wherein the second (discharging) end of the optical fiber bundle extends in a second fiber direction and is obliquely oriented to the second section plane and wherein the obliquely angled second end (discharging) of the optical fiber bundle is connected to a sensor for digital image processing, as set forth in the claimed combination.

Election/Restrictions

8. Applicant's election with traverse of claims 21-28 in Paper No. 6 is acknowledged. The traversal is on the ground(s) that both claims are drawn to a sensor and a bundle of optical fibers. This is not found persuasive because independent claim 1 is drawn specifically to an apparatus having a sensor and an optical fiber bundle wherein the first and second ends are obliquely angled and the second obliquely angled end is connected to a sensor for digital image processing.

Thus, claims 21-25 and 26-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected apparatus having a sensor and an optical fiber bundle, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 6.

9. Claims 33-36 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention of converting a visible light image into an electronic

Art Unit: 2882

image, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

The requirement is still deemed proper and is therefore made FINAL.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Therese Barber whose telephone number is (703) 306-0205. The examiner can normally be reached on Monday to Friday from 8:30 a.m. to 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-4857 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.

tb *AB*
June 11, 2003



DAVID V. BRUCE
PRIMARY EXAMINER